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TI Studies on solid superacid SO<sub>2</sub>-4/TiO<sub>2</sub> modified by Tm loading  
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SO Fenzi Cuihua (2002), 16(3), 195-198  
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AB Solid superacid catalyst Tm-SO<sub>4</sub>2-/TiO<sub>2</sub> was prepared by loading the rare earth element Tm on SO<sub>4</sub>2-/TiO<sub>2</sub> and applied to esterification of citric acid and n-butanol. The effects of Tm loading on catalytic properties were studied and the correlation between its structure and properties was investigated by PyTPD, DTA, TGA and IR. Tm loading can enhance catalytic activity. The conversion of citric acid is 94.4% over Tm-SO<sub>4</sub>2-/TiO<sub>2</sub> with 3% Tm loading. Tm can effectively decrease the carbon deposition on catalyst surface and restrain the loss of SO<sub>4</sub>2-. Therefore, Tm-SO<sub>4</sub>2-/TiO<sub>2</sub> exhibits good stability. The conversion of citric acid still remains 93.1% after 5 runs.

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